

**REMARKS**

Claims 1-17 are pending in the application and were rejected.

Various claims are amended to conform to U.S. practice.

Reconsideration of the claims is respectfully requested.

**I. CLAIM OBJECTIONS**

The claims were objected to because of improper form in Claims 6-17. Claims 6-17 have been amended above. The Applicants respectfully request that the Objections to Claims 6-17 be withdrawn.

**II. 35 U.S.C. §101:**

Claim 16 was rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. In light of the amendments above, this rejection is believed obviated.

Accordingly, the Applicants respectfully request the Examiner to withdraw the statutory subject matter rejection.

**III. CLAIM REJECTION UNDER 35 U.S.C. § 112, first paragraph (Enablement)**

Claim 17 is rejected under 35 U.S.C. § 112, first paragraph as claiming subject matter that is not described in the specification in a manner enabling one skilled in the relevant art to make or use the claimed invention. This rejection is respectfully traversed.

Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. MPEP §2164.01 (8th ed., rev. 8, August 2010). The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. *Id.* A patent need not teach, and preferably omits, what is well known in the art. *Id.* The Patent Office has the initial burden of establishing a reasonable basis to question the enablement provided for the claimed invention. *Id.* at §2164.04. The minimal requirement for a proper enablement rejection is to give reasons for the uncertainty of the enablement. *Id.*

Claim 17 is amended to remove any possibility that it can be incorrectly read as a “means plus function claim – indeed, this claim as filed did not recite a “means”. This claim requires an apparatus comprising at least one processor. The specification supports this, for example, in paragraph 0029 which describes that the “apparatus of the present invention may be a common personal computer or a workstation or a mainframe computer or a computer network programmed to implement the inventive methods.”

Accordingly, the Applicants respectfully request the Examiner to withdraw the § 112 rejection.

**IV. CLAIM REJECTION UNDER 35 U.S.C. § 112, second paragraph (Indefiniteness):**

Claims 14 and 15 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter. The Applicant has amended Claims 14 and 15 as shown above, and this rejection is believed obviated.

Claims 1 and 5 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter. The Examiner indicates that the term “redundant partitioning” is not properly defined in these claims. Since these claims do not refer to “redundant partitioning at all, these rejections are in error and are traversed.

Claim 4 was rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter. The Applicant has amended Claim 4 as shown above; while the term “approximately” is believed to be clear to those of skill in the art, since it is a commonly used and understood term, this limitation has been amended to accommodate the Examiner, and this rejection is obviated..

Accordingly, the Applicants respectfully requests the Examiner to withdraw the § 112 rejections.

V. CLAIM REJECTION UNDER 35 U.S.C. § 103

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. Kriegel et al “Using Sets of Feature Vectors for Similarity Search on Voxelized CAD Objects” SIGMOD 2003, June 9-12 (ACM), pages 587-598, hereinafter “Kriegel” in combination with U.S. Patent No. 6/091,842 to *Domanik et al*, hereinafter “Domanik”. Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kriegel in combination with Domanik and further in view of U.S. Patent Publication No 2003/0036842 to *Hancock*, hereinafter Hancock. Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kriegel in combination with Domanik and further in view of U.S. Patent Publication No 2005/0175235 to *Luo, et al*, hereinafter Luo. The Applicant respectfully traverses the rejections.

In rejecting claims under 35 U.S.C. § 103(a), the examiner bears the initial burden of establishing a *prima facie* case of obviousness. (*In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). See also *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984)). It is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. (*Id.* at 1073, 5 USPQ2d at 1598). In so doing, the examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), viz., (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. In addition to these factual determinations, the examiner must also provide “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (*In re Kahn*, 441 F.3d 977,

988, 78 USPQ2d 1329, 1336 (Fed. Cir 2006) (cited with approval in *KSR Int'l v. Teleflex Inc.*, 550 U.S. 398 (2007)).

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. MPEP § 2142 (8th ed. rev. 8, August 2010). The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. § 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* The Supreme Court held in *KSR*, in language now adopted by the Court of Appeals for the Federal Circuit, that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art."

Applicant first notes that Kriegel does not teach the significant limitations of the claims as alleged by the Office Action. For example, claim 1 requires determining the feature data for the object *on the basis of at least one property of the respective portions of the object* that are contained in the plurality of cells. Claim 5 includes a similar limitation. Nothing in Kriegel discusses doing anything on the basis of a "property of the respective portions of the object" as claimed. Since the Office Action does not actually show this limitation as taught in the art, but merely references an entire section of Kriegel, there is no *prima facie* rejection with regard to this element.

The Kriegel clearly does not teach or consider any case where at least two of the plurality of cells overlap each other at least in part, as in claim 1. The Office Action does not allege any such teaching.

Instead, the Office Action refers to Domanik. Domanik is drawn to a “cytological specimen analysis system with slide mapping and generation of viewing path information” – the study of microscope-type slide images having biological cell material. This has nothing at all to do with the techniques disclosed by Kriegel with regard to using sets of feature vectors for similarity search on voxelized CAD objects. Domanik does not discuss voxels, and has no application to CAD systems or objects. These are disparate, non-analogous references.

Domanik basically teaches that a slide image can be divided into region “tiles”, and that the depicted cell (which naturally covers most of the slide) would cover multiple tiles. This has nothing at all do to with the current claims or the Kriegel’s system. Of course, the CAD “cells” described in Kriegel’s system are completely unrelated to the biological cell shown in Domanik’s slide image.

These references cannot be properly combined. No person of skill in the art in CAD systems, searching for a way to find similarity of CAD objects using feature vectors, would look to a system that determines if regions of a slide image contain biological cell material. No person would have any expectation of success in combining biological slide “tiles” into a CAD system – and it does not appear that any combination of these references would actually function.

The Examiner’s stated “motivation” to combine Domanik’s cytological slide system with Kriegel’s CAD system is for improvements in screening and analyzing cytological specimens as

taught in Domanik. Since there is no application in Domanik for analyzing voxels, feature objects, or feature vectors, this “motivation” is clearly incorrect. Domanik has no application in retrieval of similar 3D objects, as described by Kriegel, at all.

All rejections are traversed for improperly relying on unrelated and non-combinable teachings in Domanik.

Luo is directed to a system for pattern recognition for use in automobile occupant restrains systems. It is also non-analogous art, and does not cure the deficiencies of the Kriegel/Domanik combination. Hancock is drawn to a geographic nesting system, is also non-analogous art, and does not cure the deficiencies of the Kriegel/Domanik combination. No combination of the references teach the limitations of the claims. It appears these disparate references were simply cited because they reference grids, with no concern for whether they are actually related at all to the CAD processes as claimed.

All rejections are traversed.

Accordingly, the Applicant respectfully requests the Examiner to withdraw the § 103 rejection with respect to these claims.

CONCLUSION

As a result of the foregoing, the Applicants assert that the remaining claims in the Application are in condition for allowance, and respectfully requests that this Application be passed to issue.


If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *manderson@munckcarter.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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